

**AMENDMENTS IN THE CLAIMS**

Please cancel claims 1-10 and enter claims 11-19

1-10 (cancelled)

11. (new) A data processing system comprising:

a processor;

an interconnect;

a system memory, coupled to the processor via the interconnect, wherein the system memory stores at least one object, the at least one object further includes:

a thread locality flag that is set when indicating that the at least one object has been directly referred to by only a specific thread out of a plurality of threads issued from the processor; and

a locking manager that performs a locking process on the at least one object only when the thread locality flag is not set and a thread out of the plurality of threads that is not the specific thread requests access to the at least one object.

12. (new) The data processing system according to Claim 11, further comprising:

a garbage collector for removing the at least one object from the system memory only when the thread locality flag is set and the specific thread does not include a reference pointer to the at least one object.

13. (new) The data processing system according to Claim 11, further comprising:

a thread locality manager for clearing the thread locality flag when the thread out of the plurality of threads that is not the specific thread requests access to the at least one object.

14. (new) A method comprising:

receiving a request to access an object stored in a system memory by a first thread out of a plurality of threads issued by a processor coupled to the system memory;

determining if a thread locality flag of the object is set, wherein the thread locality flag is set only if the object has been directly referred to by only a specific thread out of the plurality of threads; and

performing a locking process on the object only when the thread locality flag is not set and the first thread that is not the specific thread requests access to the object.

15. (new) The method according to Claim 14, further comprising:  
removing the object from the system memory only when the thread locality flag is set and the specific thread does not include a reference pointer to the object.
16. (new) The method according to Claim 14, further including:  
clearing the thread locality flag when the first thread is not the specific thread requests access to the object.
17. (new) A computer program product comprising:  
instructions, stored on a computer-readable medium, for receiving a request to access an object stored in a system memory by a first thread out of a plurality of threads issued by a processor coupled to the system memory;  
instructions, stored on a computer-readable medium, for determining if a thread locality flag of the object is set, wherein the thread locality flag is set only if the object has been directly referred to by only a specific thread out of the plurality of threads; and  
instructions, stored on a computer-readable medium, for performing a locking process on the object only when the thread locality flag is not set and the first thread that is not the specific thread requests access to the object.
18. (new) The computer program product according to Claim 17, further comprising:  
instructions, stored in a computer-readable medium, for removing the object from the system memory only when the thread locality flag is set and the specific thread does not include a reference pointer to the object.
19. (new) The computer program product according to Claim 17, further comprising:  
instructions, stored in a computer-readable medium, for clearing the thread locality flag when the first thread is not the specific thread requests access to the object.